

NAVAL WAR COLLEGE  
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**The Future of Surface Combatants in Operational Planning:  
Operational Overreach?**

by

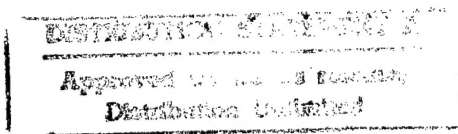
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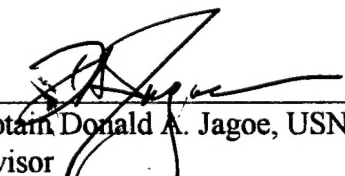
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## **ABSTRACT**

Surface combatants, with their ability to independently act as strike platforms and perform tactical ballistic missile defense, have become key elements of operational planning. As these combatants try to fulfill these new roles, in addition to satisfying traditional ones, there may be a shortage of available ships in theater to accomplish all the operational needs of planners.

This paper discusses the operational utility of surface combatant forces to operational planners and warns of potential future “operational overreach” for the force.

## **INTRODUCTION**

The nature of surface warfare has undergone a significant transformation. With the shift in focus from the open ocean war-at-sea scenario to joint littoral battlespace dominance has come a changing of the guard for surface combatants. These cruisers, destroyers and frigates, with the advent of a revolution in military affairs (RMA), are fast becoming instruments of operational, vice traditional tactical, planning. This leap in technology of newer U.S. combatants, combined with the traditional core competencies of older generation ships, has thrust the surface navy into a leading role in operational planning. In doing so, the surface navy has potentially overextended itself.

As newer combatants with greater capability come online, but in reduced numbers, competition will develop among differing, albeit equally important, elements of operational design. The end result may very well be that the surface forces of the future—so promising tactically—will be unable to fulfill key operational planning needs.

## **EVOLUTION OF SURFACE WARFARE**

Surface warfare and surface combatants have undergone a transformation, not only in technology, but also in the employment of that technology. While the impact of these changes has been felt in all surface forces,<sup>1</sup> the revolutionary impact on and within combatants has been perhaps most responsible for their new-found value to operational planners. This value in operational design will be discussed later.

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<sup>1</sup> Here, surface forces are considered to be all naval afloat units—aircraft carriers, amphibious ships, support ships, mine clearance vessels, and combatants. Combatants will be considered to be cruisers, frigates, and destroyers, with nuclear propulsion ships excluded due to their pending decommissionings. The Arsenal ship and the Surface Combatant for the 21<sup>st</sup> Century will also, for this discussion, be considered combatants.

The current surface combatant force, as programmed through 2001, consists of generally four types of platforms. Those with the Aegis Combat System combined with Tomahawk Cruise Missiles, are the 14 newest, most expensive *Ticonderoga*-class cruisers (CG-52 through CG-73). The second group, those with the Aegis Combat System (or New Threat Upgrade<sup>2</sup>) without Tomahawk cruise missiles, now comprise only the five older *Ticonderoga*-class cruisers (CG-47 through CG-51) and the four Kidd-class destroyers (DDG 991 through DDG-994). The third combatant type are those with only Tomahawk cruise missiles; these are the 24 *Spruance*-class, the oldest of the four main classes in service today, and the proposed Arsenal ship. The Arsenal ship would carry an estimated 500 Tomahawk missiles.<sup>3</sup> The fourth general type has neither the Aegis Combat System nor Tomahawk cruise missiles. Ships of this type still in service (approximately 30) are the newer ships of the Oliver Hazard Perry-class.<sup>4</sup>

All of these ship types have the capability for at least limited self defense, and possess anti-submarine and antisurface warfare capability. There are 115 to 119 surface combatants of all types budgeted through the year 2001.<sup>5</sup> As new-construction Aegis destroyers enter the fleet, older frigates and destroyers will be decommissioned, however, a one-for-one replacement will most likely not be maintained due to the high cost of the

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<sup>2</sup> New Threat Upgrade (NTU) describes an integrated anti-air warfare system that greatly increases the capability versus air threats compared to the *Spruance*-class suite, but is significantly less capable than the Aegis Combat System.

<sup>3</sup> Scott Truver, "Floating Arsenal to be 21<sup>st</sup> Century Battleship" *Jane's International Defense Review*, July 1996, 44.

<sup>4</sup> The Oliver Hazard Perry-class frigates (FFG-7 through FFG-61) were built in four flights. The older Flight I and Flight II (FFG-7 through FFG-28) ships have been decommissioned, transferred to the reserves, or sold via foreign military sales programs.

<sup>5</sup> FY1997 budget as stated in Internet World Wide Web site:  
[www.chinfo.navy.mil/navpalib/budget/FY97/hilites/shipops.html](http://www.chinfo.navy.mil/navpalib/budget/FY97/hilites/shipops.html)

Aegis destroyers<sup>6</sup>. In later years the SC-21, whose design is uncertain at this time, will supplement the combatant force.

As important as the “hardware” is to surface combatants, it is the general trend in surface warfare that will increasingly lead these forces to be considered assets in operational planning. This revolution in military affairs (RMA) has been characterized by, among other things, increased precision and lethality of weaponry, improvements in intelligence, timely dissemination of information, and increased stealth and dispersion.<sup>7</sup>

Precision and lethality in themselves propel surface ships directly toward the operational level of war. As demonstrated in 1993 by Tomahawk strikes against selected Iraqi targets in response to an attempt on former President Bush’s life, surface combatants were able to make a relatively low-risk quick and decisive strike—not possible even 10 years prior by anything less than a complex, higher-risk manned air operation. The ability to accurately locate and destroy targets a great distance away from an 8,000-ton platform certainly provides advantages to the combatant fleet.

Another advantage of newer surface combatants is the “sensor-to-shooter” capability that is present in the Aegis Combat System. The ability of these ships to share information among many shore, air and afloat nodes is right in keeping with joint doctrine. Such high-speed data networking of target-quality data will greatly enhance battlespace awareness well into the 21<sup>st</sup> Century. The Cooperative Engagement Concept (CEC), which allows a sensing node (Patriot missile radar, AWACS, or Aegis, for example) to detect an airborne target, and pass pinpoint target information to any firing

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<sup>6</sup> The cost of the Arleigh Burke-class destroyer is approximately 900 million dollars, roughly 300% of the cost of the Perry-class frigate. The Ticonderoga cruiser’s cost was roughly 1.2 billion dollars, or 400% of the Perry-class frigate.

<sup>7</sup> Joint Chiefs of Staff, Joint Vision 2010 (Washington, D. C.: Joint Chiefs of Staff), 14-15.

platform (Arsenal ship, Aegis ship, Patriot battery), has been successfully tested in Aegis ships and acts as a force multiplier in battlespace management.

Maritime forces are by their very nature dispersed forces, which make them more difficult to target than concentrated forces. The new Aegis destroyers were designed with state-of-the-art radar-signature- reducing "stealth" qualities. Older ships are being retrofitted with radar absorbing material and electronic modifications to assist in their stealthiness.

Certainly the surface combatants of the future are highly capable tactical platforms. As such, they are no longer to be viewed as mere elements of an aircraft carrier battle group, but are instead vessels whose inherent capabilities affect the operational levels of warfare.

## **THE SURFACE COMBATANT'S EXPANDING ROLE IN OPERATIONAL PLANNING**

*Operational art* is defined by Army Field Manual 100-5 as "the skillful employment of military forces to attain strategic and/or operational objectives within a theater through the design, organization, integration, and conduct of theater strategies, campaigns, major operations, and battles."<sup>8</sup> Operational art translates theater strategy and design into operational design, which links and integrates the tactical battles and engagements that, when fought and won, achieve the strategic aim.<sup>9</sup>

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<sup>8</sup> Department of the Army, FM 100-5, *Operations*, (Washington, D. C.: Department of the Army, June 1993), p. 6-1.

<sup>9</sup> Ibid.



Operational design is composed generically of guidance, desired end state, objectives, identification of the enemy's "critical factors," direction and operational idea (or scheme.)<sup>10</sup> Of these, the operational idea is considered to be the essence of operational design, for it is this idea which translates the vision of the commander's intent and how he or she intends to carry it out.<sup>11</sup> To execute the operational idea, the operational planner must be assigned those forces which can carry out component functions—for having the wrong forces forebodes failure for the entire operation.

Therefore, it would be analytically logical to look at each element of operational design and evaluate how well forces—in this case, surface combatant forces—can fulfill their role within the operational idea. Even more importantly future forces must be inherently capable of carrying out their expected role(s) in the operational idea.

### *Elements of the Operational Scheme*

Although there are many different views regarding what are the essential elements of an operational idea, one author provides several examples of these integral elements:<sup>12</sup>

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<sup>10</sup> Milan Vego. Fundamentals of Operational Design. U.S. Naval War College (Newport, RI: August 1996), 1.

<sup>11</sup> Ibid., p.9.

<sup>12</sup> Ibid., p.10.

- Method of defeating the enemy
- Application of force and assets
- Sector of main effort
- Point of main attack
- Operational maneuver
- Operational fires
- Operational deception
- Protection of own Center of Gravity
- Operational Sequencing
- Anticipation of culminating point
- Phasing
- Operational pause
- Operational tempo and momentum
- Regeneration of combat power
- Branches and sequels
- Operational reserves
- Operational sustainment
- Coordination
- Selected principles of war

While all these elements of operational design are useful, particular elements are more meaningful when comparing or assessing forces. For example, operational pause is an important element, but not for the purpose of assessing forces, as pause could be employed by any combination of forces. Therefore, for the purposes of this paper, only those elements most pertinent to maritime forces will be used, specifically:

- Protection of own center of gravity
- Operational maneuver
- Operational fires
- Operational sustainment

Surface combatants have an important role in each of these elements. In fact, in many operations, they could have a role in all of these elements, placing a heavy burden on them. It is useful to demonstrate the specific role for each of the most pertinent elements of the operational idea as they pertain to surface forces.

### *Protection of Center(s) of Gravity (COGs)*

As the focus of surface combatant forces shifts to the littoral,<sup>13</sup> so must surface forces be able to protect landward centers of gravity, such as friendly population centers, friendly troop concentrations, or vital resources (such as desalination plants). Additionally, seaward COGs—amphibious ships and aircraft carriers--will also need to be protected by surface combatants from surface, subsurface and air threats.

One of the primary operational requirements with which surface forces of the future could be burdened is to provide theater ballistic missile defense (TBMD) of landward COGs. With 75 percent of the worlds population estimated to be located within 80 km of the shore by the year 2030,<sup>14</sup> it is logical to expect that surface forces will be needed by operational planners to protect such areas from attack by theater ballistic missiles. A naval surface force TBMD concept could provide rapid response to most vital areas with a minimum of three Aegis ships, each carrying between 50 and 100 missiles onboard<sup>15</sup> (only one Aegis ship if teamed with an Arsenal ship in a sensor-shooter bond). Compared with the airlift required for one Army Patriot battalion (about 300 C-130 sorties and the need for a waiting, appropriate airfield) or a Theater High Altitude Area Defense (THAAD) battalion (nearly 100 sorties), economy of force

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<sup>13</sup> Department of the Navy, *Forward...From the Sea*, (Washington, D.C.:1994,) 3.

<sup>14</sup> Reuven Leopold, "The Next Naval Revolution," *Jane's Navy International*, January/February 1996, 14.

<sup>15</sup> Although Aegis cruisers and destroyers will be capable of carrying 124 and 96 missiles, respectively, there will most certainly be a mix of surface-to-air missiles, vertically launched torpedoes, and Tomahawk missiles.

considerations appear to lean toward the naval option.<sup>16</sup> The potential importance of TBMD in the force protection role will almost assuredly make it a linchpin in the operational commander's scheme.

Protection of seaward COGs is also a critical design element. In many littoral operations, carrier air will be an integral COG that may only be able to be protected at sea by surface combatants. Likewise, amphibious readiness groups (ARGs) may also need protection as part of an operational plan that have a landing force as the COG.

### ***Operational Maneuver***

Maneuver involves the employment of forces to secure an advantage or leverage over the enemy. While tactical maneuver aims to gain an advantage in combat, *operational maneuver* aims to reduce the amount of fighting necessary to accomplish the mission.<sup>17</sup> Firepower is often a key element in conducting operational maneuver as it has the functions of facilitating maneuver by fixing enemy forces (and destroying them when necessary) as well as disrupting enemy movement and neutralizing enemy fire support, command and control, and logistics.<sup>18</sup>

Surface forces offer some great advantages in maneuver. Their ability to use envelopment, converging lines of operation and their speed of maneuver could be

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<sup>16</sup> William G. Fallon, "Combating the Ballistic Missile Threat," U.S. Naval Institute Proceedings, July 1994, 33.

<sup>17</sup> U.S. Marine Corps, FMFM 1-1, *Campaigning*, (Washington D.C.: Department of the Navy,) June 1994, 66.

<sup>18</sup> Vego, p.15.

operationally useful in many operations. In the Marine Corps "Operational Maneuver From the Sea" (OMFTS), it is operational maneuver that is the core strength of the Navy-Marine Corps team. By making use of sea-based logistics, sea-based fire support, and use of the sea as a medium for tactical and operational movement, expeditionary forces can quickly and decisively strike at the enemy's center of gravity.<sup>19</sup>

As surface combatants are the focus of this paper, their role in operational maneuver is to provide fires (tactical here) to support OMFTS, to protect the amphibious ships during operational maneuver, and to protect the sea-based logistic tail. The utility of combatants in maneuver may also be a COG protection role, if the landing force is considered to also be the center of gravity.

### ***Operational Fires***

*Operational fires* are closely tied to operational maneuver, but as indirect support to maneuvering forces. Operational design should synchronize operational fires, placing a great burden on intelligence and dissemination systems to identify the criticality and vulnerability of targets.<sup>20</sup> Surface combatants are able to perform operational fires in two ways--through offensive strike with Tomahawk missiles, and in support of carrier-based air strikes.

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<sup>19</sup> Department of the Navy, Operational Maneuver From the Sea, (Washington, D.C.:1994),

<sup>20</sup> Vego, p.16.

Surface combatants with Tomahawk missiles bring many advantages to the operational scheme, the best being the ability to strike targets well inland, unmanned, and with pinpoint precision. The proposed Arsenal ship could operationally be very valuable to planners, given its relatively large inventory of missiles and its ability to be pre-staged or moved into theater quickly. Although its future is uncertain, undoubtedly such a ship would be precisely the right instrument to provide additional firepower requirements projected for rapid response in the littoral.<sup>21</sup>

As in protecting amphibious ships to support OMFTS, surface forces would similarly need to protect the aircraft carrier who may be providing operational fires. Whether a direct shooter, or supporting shooters, surface forces will likely be expected by operational planners to be an integral part of operational fires in the littoral.

### ***Operational Sustainment***

*Operational sustainment* is another vital function within the operational idea. At the operational level, sustainment comprises the logistics and support activities required to sustain campaigns and major operations.<sup>22</sup> For surface combatants, this role initially looks minimal, however, when considering that operational sustainment includes defense of lines of support, then the surface combatant role becomes greatly increased,

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<sup>21</sup> Leopold, p.18.

<sup>22</sup> Department of the Army, FM 100-1, Combat Service Support (Washington D.C.: 1995), 2-2.

particularly in support of rear sustainment lines.<sup>23</sup> This role for surface forces is characterized by the traditional protection of sea lines of communication (SLOCs.) SLOC protection consists of protection and escort of logistics vessels at sea against surface, subsurface and air attack. Certainly this is a priority in the early stages of a crisis or upon execution of the operational idea, where needed forces, a preponderance of which will most likely come by means of sealift (such as Army and Marine prepositioning ships), must be protected by a limited number surface combatants in theater. This mission, protection of maritime lines of communication, is perhaps one of the core competencies that surface combatants will be expected to perform in operational schema that are designed for the littoral.

#### ***Other Operational Considerations for Surface Combatants***

While surface combatants may be considered valuable in the previously mentioned operational design element, there are other operational considerations that will affect the utility of those forces. Particularly notable is the role for surface forces in operational deception and operational reserve. For example, a small number of even Type IV ships could be fitted with equipment to electronically simulate a much larger force, perhaps to mislead an enemy into believing it was an aircraft carrier or an

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<sup>23</sup> Ibid., p. 2-4.

amphibious ship preparing to land. It is easy to see that surface combatants could be effective in this role.

*Operational reserve* is a force of such size and combat power to have a decisive impact on the outcome of a major operation.<sup>24</sup> Naval forces, because of their ability to easily reorient<sup>25</sup> are naturally excellent choices for operational reserve, as they are adaptable to several missions and are usually easier to maneuver. The disadvantage of using surface combatants as operational reserve is that they will most likely be placed at a premium upon execution of the operational scheme and will be directed toward operational fires, COG protection, operational sustainment or other operational roles. This requirement, for operational reserves to be unused elsewhere, makes surface combatants much less likely to be used in this role, until possibly later in the operational scheme, when other forces have arrived in theater to assume primary operational design roles.

## **FUTURE OPERATIONAL UTILITY OF SURFACE COMBATANTS**

As has been shown above, surface combatants have a great ability to be molded into the operational scheme, particularly early in the campaign—due to their expeditionary nature and new capabilities in TBMD and strike warfare (with

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<sup>24</sup> Vego, p.23.

<sup>25</sup> Ibid., p.24.



Tomahawk). As such, it is important to consider how to best optimize these forces as to their functionality to each of the elements of the operational idea.

When considered with respect to the pertinent elements of the operation scheme, it is useful to think of platform types with an operational utility as listed in Table 1.

Table 1-Current Platform Types and Operational Utility

	<i>Type I</i> <i>Aegis with Tomahawk</i>	<i>Type II</i> <i>Aegis/NTU without Tomahawk</i>	<i>Type III</i> <i>Tomahawk Only</i>	<i>Type IV</i> <i>Neither Aegis nor Tomahawk</i>
<i>COG Protection</i>	TBMD/ Amphib/Carrier Protection	Amphib/ Carrier Protection	Amphib/ Carrier Protection*	Amphib/ Carrier Protection*
<i>Operational Maneuver</i>	Tactical Fires/ Maneuver	Tactical Fires/ Maneuver	Tactical Fires/ Maneuver	Maneuver/
<i>Operational Fires</i>	Strike/Carrier Escort	Carrier Escort	Strike/ Carrier Escort*	Carrier Escort*
<i>Operational Sustainment</i>	Escort/SLOC Protection	Escort/SLOC Protection	Escort/SLOC Protection*	Escort/SLOC Protection*
<i>Other Op. Considerations</i>	Op. Reserve/ Op. Deception	Op. Reserve/ Op. Deception	Op. Reserve/ Op. Deception	Op. Reserve/ Op. Deception

\* Type III and IV ships possess a lesser degree of protection than the Aegis ships, particularly in air defense, however if paired with Aegis, they complement each other.

Table 1 demonstrates the operational utility of Tomahawk-equipped Aegis ships—Arleigh Burke-class destroyers and Ticonderoga-class cruisers (Type I ships) given their flexibility and capability. It makes sense that operational commanders would want these very capable tools in the toolbox when devising the operational idea. It should also be noted, however, that even the Type IV ships have a high degree of operational utility and there are no similar low-cost/high utility ships of the same type on the visible acquisition horizon—and certainly not in their numbers.

The current mix of ships, as projected through 2001, seems to lend reasonable flexibility to operational planners. While some flexibility, or operational reserve capability is given up, at least it appears that surface forces are fulfilling their maritime role. However, as combatant numbers decline and are replaced by high-end ships and operational needs are not met, the surface combatant force could become victims of their own capability in future years.

#### **STRAITS OF HORMUZ—AN OPERATIONAL ILLUSTRATION**

To illustrate the future operational utility of surface combatants, it may be helpful to consider a scenario in which operational planners would need to devise an operational scheme. As a hypothetical scenario, we will consider a scenario in the year 2005, in which Iran decides to seal off the Straits of Hormuz (SOH) and prevent the flow of

shipping. Americans in Iran are detained and the National Command Authority (NCA) has decided that military force will be used to rescue the hostages.

Commander Fifth Fleet, as the Naval Component Commander for Commander-in-Chief, Central Command acting as Commander, Joint Task Force, Middle East, is faced with devising a campaign plan with the following surface combatants in the area:<sup>26</sup> five Aegis Cruisers, 18 Aegis destroyers, and four frigates. Divided into types, there are 23 Type I (Aegis/Tomahawk) and four Type IV (no Aegis/no Tomahawk). Given these forces, the NCC staff must review the operational design requirements.

### ***COG Protection***

While it would be difficult to determine what the COG would be in this scenario, suffice it to say that the naval forces would perhaps be the only force that would be able to perform immediate TBMD defense, using Aegis Lower Tier defense. To do this, and depending on the area to defend (i.e., forces on the ground, neighboring allies, etc.) would require a minimum of 3 (Type I) ships. Those ships would be unavailable for any other tasking. The requirement could easily rise if more areas had to be protected (i.e., Bahrain, United Arab Emirates, or Qatar).

An aircraft carrier (or carriers!)<sup>27</sup> may be a center of gravity, as well may amphibious forces. It could be expected that surface forces will be required to protect

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<sup>26</sup> This mix of combatants is an estimate, projected by the number of ships that could be available in theater based on operational tempo, and current shipbuilding plans.

both. A reasonable requirement here would be at least two to four ships in that function—probably one or two Type I ships and an equal number of any Type.

### ***Operational Maneuver***

Operational maneuver will be an important consideration that will require some allocation of forces. To land an amphibious force, especially on a hostile shore, will require much use of tactical fires to facilitate maneuver. Given the expediency likely required of such an operation, naval combatant forces could be vital in protecting amphibious ready groups (ARGs) with embarked Marines to defend against hostile surface, air and subsurface units. Additionally, the logistics line would need to be protected. Thus, for tactical fires, protection and rear logistics line protection, this operational design element might require as many as 10 ships, probably Type I, although Type IV ships could be used here.

### ***Operational Fires***

There would likely be a requirement to strike key targets as part of such a campaign. While naval combatants would likely be one part of a joint effort in

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<sup>27</sup> During the Gulf War, three aircraft carriers were used; reasonably two would be likely in this scenario.

operational fires, their expeditionary nature could make them the "fires of choice," to augment long-range bombing and naval air. Ten Type I ships would not be unreasonable.

Also, carrier aircraft would most likely be used for operational fires, and protection of that force from subsurface, surface and air/missile threats will require a minimal force of at least two ships, one of Type I and another of any Type.

### ***Operational Sustainment***

Operational sustainment could easily be the breaking point for naval combatants in such a scenario. One of the initial operational goals would be to facilitate free movement of materials through international waters—be it oil, cargo or sealift in support of the operation. Dedication of several assets in this escort role, versus a lethal diesel submarine, land-based missile and surface missile threat could easily exhaust naval resources. More importantly, it most likely can not be done by any other force. Ships would have to escort lines of ships, such as was done during the Operation Earnest Will convoy escorts of reflagged Kuwaiti oil tankers in the late 1980s, or be staged along the convoy route and "handoff" the convoy through specified zones. In either event, a large number of surface forces would need to be employed, minimally six to ten.

### ***Other Operational Considerations***

Other operational considerations by the NCC must include operational reserve, or at least some forces that could carry out designated missions as needed, who are not a primary force. In a crisis where time is of the essence and most forces are naval, then either the reserve must also come from naval combatants, or else the risk of the operation is elevated. Phasing the operation could also be a force multiplier, but at the expense of at least some operational time flexibility. Also, some forces may be needed to perform an operational deception role, perhaps to feint a landing elsewhere. At least a few ships could perform this function, if only there were more available to perform this element of the operational scheme.

Some would argue that these numbers are inflated because some ships can perform more than one role. In reality, however, it is easy to overtask a ship in such demanding environments, and to dual or triple task could reduce effectiveness. Besides, many missions are mutually exclusive, for multi-mission does not necessarily mean multi-concurrent-mission.

### **CONCLUSION**

The above illustration is merely meant to stimulate thought as to the utility of surface combatants to the operational scheme, as there are too many unknowns to make a solid analysis. What is apparent, however, is that surface forces are facing a double-

edged sword—becoming so good at supporting the operational levels of war that the potential for “operational overreach” is high.

It may be advantageous to consider those forces which lend more flexibility to operational designers. All combatants need not be costly, multi-mission platforms. With good shared information networks, small single- or dual-mission platforms may suffice, especially when more of them are available. The caveat here is that there must be at least some forces with high-end capability and multi-functionality.

It is therefore incumbent upon force planners to consider the operational utility of the entire array of surface combatants that will be available to operational planners. For the four main elements of the operational idea must be performed by some force. And those elements that can only be accomplished by surface combatant forces, as a core competency—such as sustainment (SLOC protection), protection of seaborne COGs, -- should be given greater weight when acquiring new ships.

The surface combatant community must accept some harsh reality if it expects to be a credible element in operational planning. In restrictive budget environments, it is realistic to expect that costly, albeit very capable, Aegis ships will be effective platforms as utilized in many operational design elements. Unfortunately, because there will be fewer of them, there may be no other ships left to do critical seaborne missions that no other force will be able to do.

There are solutions. First, buying a lower end mix of ships to complement the capabilities of Aegis combatants, such as the Israeli Saa'r fast attack craft,<sup>28</sup> would lend flexibility to operational planning. Acquiring a less expensive ship could mean that a larger quantity of them could be purchased, giving the operational planner more ships to perform elements of the operational scheme. The SC-21 acquisition process could include such a ship as an option to replace the aging Spruance-class destroyers and Perry-class frigates. A second possible solution is to pass on the role of escort and SLOC protection to allies or to the Coast Guard. The disadvantage of this solution is that risk is added. Lack of a common naval doctrine and interoperability hindrances would add risk and limit flexibility. A third possibility is to yield the TBMD role, if another service could sufficiently cover that role. The likelihood of that is low, as the Aegis Upper- and Lower-Tier are the best solution in the foreseeable future, both for cost and capability.<sup>29</sup> There are other options that could help to alleviate the heavy burden of operational requirements that could be placed upon surface combatants in future operations. Failure to consider the operational implications of various force mixes could put combatant forces in a position of "operational overreach" and limit the overall effectiveness and/or flexibility of those forces in operational planning.

In the opinion of this author, the best alternative is to consider a high-tech, low cost alternative for the SC21. If given an unlimited, nearly anyone would buy the

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<sup>28</sup> Kenneth Brower and James Kehoe, "Designed for the Job," U.S. Naval Institute Proceedings, October 1996, 26.

<sup>29</sup> James W. Casan, "A Compelling National Requirement: Navy's Aegis System is front-runner for TBMD Mission," Sea Power, June 1995, 36.



absolute best ship possible—which would probably be a follow-on Aegis platform.

However the days of unconstrained budgets are over, and it would be more prudent to use dwindling shipbuilding funds to design a larger number of smaller, still high-tech, ships to perform vital escort and protection roles.

Consider such a ship in the previous illustration. Instead of assigning the Type I ships to perform escort and close in protection missions, these new Type IV ships would be able to alleviate much of the burden. Other than a strike or TBMD role, a smaller ship (especially if CEC capable) would provide great operational utility. And because there would be more of them, due to the lower cost, as many as six or more could be available to operational planners, allowing for some operational reserve and less multi-tasking—thereby reducing overall risk of the operation.

The Navy has embraced joint operational thinking. With the advent of naval doctrine (through the creation of Naval Doctrine Command in 1993) and a renewed emphasis on operational art in Joint Professional Military Education comes an effort to shift traditional tactical thinking more towards the operational. For surface warriors, it is increasingly important for this operational focus to permeate all ranks, and to begin to attack new challenges with this focus in mind. This operationally-focused mindset will only continue to result in the ascendancy of surface warfare in operational planning and in the esteem of the other services.

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